

What is claimed is:

1. A zoom lens barrel comprising:

a cam ring which is driven to rotate;

a first lens frame which is positioned around said  
5 cam ring to be guided linearly along an optical axis,  
said first lens frame supporting a frontmost lens group  
of a zoom lens system,;

a light-shield exterior ring which is positioned  
around said first lens frame;

10 a first outer cam groove and a second outer cam  
groove which are formed on an outer peripheral surface  
of said cam ring, each said first and second cam grooves  
including a zooming range for performing a zooming  
operation of said zoom lens system; and

15 a first cam follower formed on said first lens  
frame, said first cam follower being engaged in said  
first outer cam groove;

a second cam follower formed on said light-shield  
exterior ring, said second cam follower being engaged  
20 in said second outer cam groove through a linear guide  
slot which is elongated in a direction parallel to said  
optical axis, which is formed on said first lens frame,  
and

wherein said first outer cam groove and said second  
25 outer cam groove are shaped so as to move said first lens

frame and said light-shield exterior ring in the same moving path in said zooming ranges thereof.

2. The zoom lens barrel according to claim 1, further comprising a lens barrier unit including at least  
5 one barrier blade,

wherein said lens barrier unit is supported by said light-shield exterior ring at a front end thereof, and

wherein retracting ranges of said first outer cam groove and said second outer cam groove are shaped so  
10 that said light-shield exterior ring advances from a photographing position thereof relative to said first lens frame to position said lens barrier unit in front of said frontmost lens group without the lens barrier unit interfering with said frontmost lens group when  
15 said zoom lens barrel is retracted to a retracted position thereof.

3. The zoom lens barrel according to claim 1, wherein said first lens frame comprises an outer ring portion, an inner ring portion and a flange wall by which  
20 a front end of said outer ring portion and a front end of said inner ring portion are connected, and

wherein said cam ring is positioned between said outer ring portion and said inner ring portion.

4. The zoom lens barrel according to claim 3,  
25 further comprising a second lens frame which is

positioned inside said inner ring portion, and is guided linearly along said optical axis,

wherein at least one opening, through which the position of a lens group supported by said second lens frame in said optical axis direction, can be adjusted is formed on said first lens frame.

5. The zoom lens barrel according to claim 1, further comprising a biasing member, positioned between said first lens frame and said light-shield exterior ring, for biasing said light-shield exterior ring forward relative to said first lens frame.

6. The zoom lens barrel according to claim 5, wherein said biasing device comprises a compression coil spring.

7. The zoom lens barrel according to claim 4, wherein said opening comprises:

at least one outer opening formed on said outer ring portion, and

at least one inner opening formed on said inner ring portion,

wherein said outer opening and said inner opening are aligned in a radial direction of said zoom lens barrel.

8. The zoom lens barrel according to claim 1, further comprising a stationary barrel having a female

helicoid formed on an inner peripheral surface of said stationary barrel,

wherein a male helicoid is formed on an outer peripheral surface of said cam ring to be engaged with  
5 said female helicoid, and

wherein a spur gear which is engaged with a drive pinion is formed on thread of said male helicoid.

9. The zoom lens barrel according to claim 1, further comprising:

10 a second lens frame which is positioned inside said inner ring portion, is guided linearly along said optical axis, and includes a third cam follower; and

an inner cam groove formed on an inner peripheral surface of said cam ring so that said third cam follower  
15 is engaged in said third cam groove.

10. The zoom lens barrel according to claim 2, wherein the distance in the optical axis direction between said first cam groove and of said second cam groove changes from a predetermined position within a  
20 range before said zoom range.